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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/181,021 10/27/98 YOSHIOKA Y 51270-245583

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TM02/0829

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EXAMINER

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ARMSTRONG, A	
ART UNIT	PAPER NUMBER

2641
DATE MAILED:

08/29/01

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

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Office Action Summary

Application No.

09/181,021

Applicant(s)

YOSHIOKA ET AL.

Examiner

Angela A. Armstrong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5-6, 9-13, 17-21, 25-27, and 28-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Sethares (US Patent No. 5,504,270).

3. Regarding claims 1-3, 5-6, 9-13, 17-21, 25-27, and 28-35 Sethares teaches
analyzer device that analyzes....components in the input voice signal... at Figure 4A, 4B,
col. 4, lines 49-52, col. 5, lines 24-29 and col. 9, line 35 to col. 10, line 57

Fast Fourier Transform analysis at col. 5, lines 24-29 and col. 4, lines 45-52

derive a parameter set of an original frequency and original amplitude... at Figure 4A,
col. 4, lines 49-52, col. 5, lines 24-29 and col. 9, line 35 to col. 10, line 57

sinusoidal wave components and frequency and amplitude coordinates at Figures 4A and
4B and col. 4, lines 49-52

memory means for memorizing pitch information...reference signal... at col. 10, lines
23-30

memory means for memorizing amplitude information....reference signal... at col. 10,
lines 23-30

modulating means for modulating frequency ...according to pitch information from
memory means... at col. 9, line 35 continuing to col. 10, line 57

modulating means for modulating amplitude...according to amplitude information from memory means... at col. 9, line 35 continuing to col. 10, line 57

mixing means for mixing...to synthesize output voice signal having a pitch or timbre different from that of the input voice signal and influenced by that of the reference signal at col. 6, lines 50-62 and col. 9, line 35 continuing to col. 10, line 57

memory means for memorizing primary pitch information...at col. 10, lines 23-30

secondary pitch information representative of a fractional pitch fluctuating relative to the discrete pitch...at col. 8, lines 18-60

control parameter effective to control a degree of modulation of ...at col. 10, lines 44-51.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4, 7-8, 14-16, and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sethares.

Regarding claims 4, 7-8, 14-16, and 23-24 Sethares teaches

detecting a pitch of the input signal based on results of extraction...at col. 9, lines 38-52

switch means ...detecting means does not detect pitch...outputting an original of input voice signal...It is noted that Sethares does not specifically disclose a switch means for outputting an original of the input voice signal in situations in which a pitch is not detected from

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the input signal. However, it would have been obvious to output an original signal in cases in which a pitch is not detected from the input signal to avoid large fluctuations in the pitch of the signal, for the purpose of providing for smooth transitions as the parameter information is synthesized and reducing the unnaturalness of the synthetic signal.

It is noted that Sethares does not disclose varying the volume of the output signal to...emulate volume variation the reference signal. However, it would have been obvious to one of ordinary skill at the time of invention to modify the system of Sethares and to adjust the volume level of the output signal to match the volume level of the target or reference signal for the purpose of compensating for nonuniformities and unnaturalness that occur due to signal conversion.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Gibson (US Patent No. 5,567,901) teaches a method and apparatus for changing the timbre and or pitch of audio signals.

Ojard (US Patent No. 5,966,687) teaches a vocal pitch corrector in which the pitch of an input human vocal signal is corrected by shifting the pitch of the vocal signal to match the pitch of a reference signal.


Park et al (US Patent No. 5,644,677) teaches a system for real-time pitch shifting.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela A. Armstrong whose telephone number is 703-308-6258. The examiner can normally be reached on Monday-Thursday 7:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on 703-305-6137. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-6306 for regular communications and 703-308-6296 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

AAA
August 27, 2001



TĀLVĀLDIS IVARS SMITS
PRIMARY EXAMINER